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RESEARCH NOTE

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COUNTING TREE GROWTH RINGS MODERATELY DIFFICULT TO DISTINGUISH

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There is an extensive literature dealing with techniques and gadgets to facilitate counting tree growth rings (Glock, 1937; Patterson, 1959)1/. A relatively simple method is described below, satisfactory for species too difficult to count in the field, but not sufficiently difficult to require the preparation of microscope slides nor staining techniques.

1. Extract a core which includes the pith. Large cores (11-12 mm. or 3/8" diameter) are more satisfactory than narrow ones.

2. Insert the complete core in a grooved mounting board, Figure 1, with the cross-sectional face of the core up. The grooves must be approximately 1-2 mm. narrower than the core diameter so that the core can be wedged firmly into place. Depth of the groove should be 6-7 mm., so that nearly half of the core is above the surface of the mounting board.

3. Identify the cores. A diagram on a separate sheet of paper serves as insurance against a slip of the sander in later steps.

4. Sand all cores in the mounting board down enough to allow a sufficiently wide, flat surface for easy counting. About 3 mm. sanded off yields a flat face nearly 7 mm. wide. A power sander greatly facilitates this step.

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* In cooperation with the University of Puerto Rico.

1/ Glock, W.S. 1937. Principles and methods of tree-ring analysis. Carnegie Institute of Washington Publication 486. 100 pp.

Patterson, A.E. 1959. Distinguishing annual rings in diffuse porous tree species. Jour. Forestry 57:2:126.

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5. Smooth face with a fine grade of moistened emery cloth. Beginning with No. 280, following with 320, and finishing with No. 400 is the most satisfactory combination tried to date.

6. If desired, moisten cores with a light grade of machine oil or diesel fuel.

7. Magnification of 10-20x may simplify the count. Larger magnifications appear to reduce accuracy of counts, at least for teak.

In a recent test with cores from 48 teak trees at two locations, field counts varied from wildly erratic to impossible. Actual ages of the trees were 13 and 23 years. After preparation as described above, counts at 7x magnification by two experienced and two completely inexperienced observers showed a maximum discrepancy on a single core of 7 rings. The experienced observers differed by a maximum of 2 rings.

Difference in mean counts for all observers was 0.9 ring; between experienced observers it was only 0.1 ring.

Resumen

Se describe un método relativamente sencillo y satisfactorio para contar los anillos de crecimiento en especies muy difíciles de contar en el bosque, pero no lo suficientemente difícil para preparar láminas de microscopio ni técnicas de teñir.

1. Extraiga del árbol una sección barrenada que incluya la médula.

2. Inserte la sección completa en un tablero acanalado, Fig. 1. Las ranuras del tablero deben ser aproximadamente 1-2 mm. más estrechas que el diámetro de la sección y con un fondo de 6-7 mm. (para secciones de 12 mm. de diámetro).

3. Identifique las secciones.

4. Lije todas las secciones en el tablero hasta obtener superficies anchas y planas.

5. Suavice la superficie con una tela esmeril mojada de grado fino.

6. Si se desea, humedezca las secciones de madera con aceite de máquina liviano.

7. Un aumento de 10-20x puede simplificar el conteo.

En una prueba reciente con secciones de 48 árboles de teca en dos localidades, por dos observadores con experiencia y dos sin ninguna experiencia, la diferencia en el conteo promedio de todos los observadores fué 0.9 anillo; entre los observadores con experiencia fué de solo 0.1 anillo.

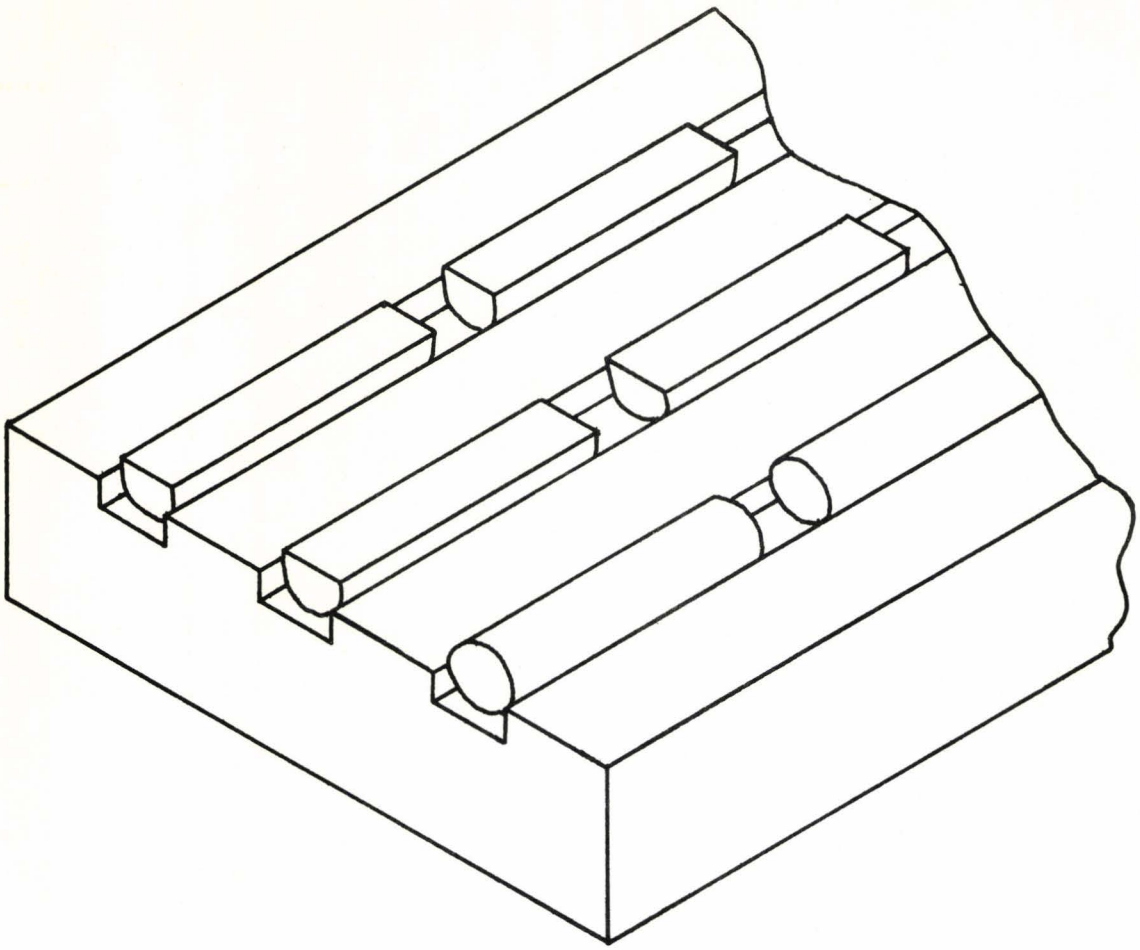

Figure 1.

Schematic diagram of mounting block showing 4 cores which have been sanded flat for easy reading and 2 cores still complete and round. Width of grooves should be 1 to 2 mm. less than diameter of the core. Depth of grooves should be slightly more than half the core diameter. If core diameter is 11 mm. depth should be 6 mm.

Dibujo esquemático de un tablero demostrando 4 secciones barrenadas que han sido lijadas planas para facilitar la observación y 2 secciones aún completas y redondas. El ancho de la ranura debe ser de 1 a 2 mm. menos que el diámetro de la sección. La profundidad de la ranura debe ser poco más que la mitad del diámetro de la sección. Si el diámetro de la sección es 11 mms. la profundidad debe ser 6 mm.